THOMSON SEMICONDUCTORS

TAA761C
TAA762M
TAA765I

OPEN COLLECTOR OUTPUT SINGLE OP-AMPs

These circuits are general purpose operational amplifiers built on a single silicon chip. They provide high voltage gain and an excellent temperature stability.

Frequency compensation is obtained with a single 50 pF capacitor. The amplifier is built with an input protection ; the principal advantage is the possibility to deliver an output current of 70 mA.

The TAA761 is specified over a large supply voltage range : ± 1.5 V to ± 18 V.
The TAA861 is specified over a large supply voltage range : ± 2 V to ± 10 V.

- High input impedance.
- High voltage gain.
- Open collector output.
- Output current : 70 mA.
- Supply voltage range : ± 2 V to ± 10 V (TAA861),
  ± 1.5 V to ± 18 V (TAA761).

ORDERING INFORMATION

PART NUMBER	TEMPERATURE RANGE	PACKAGE	
		H	DP
TAA761C	0°C to + 70°C	•	•
TAA762M	− 55°C to + 125°C	•	
TAA765I	− 25°C to + 85°C	•	•

Examples : TAA761CH, TAA765IDP

OPEN COLLECTOR OUTPUT SINGLE OPERATIONAL AMPLIFIERS

CASES

CB-107

H SUFFIX
METAL CAN

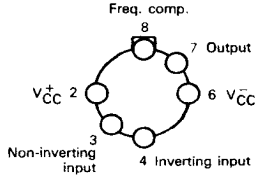
CB-116

DP SUFFIX
PLASTIC PACKAGE

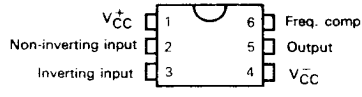
PIN ASSIGNMENTS

(Top views)

CB-107



CB-116



Réf. 00320

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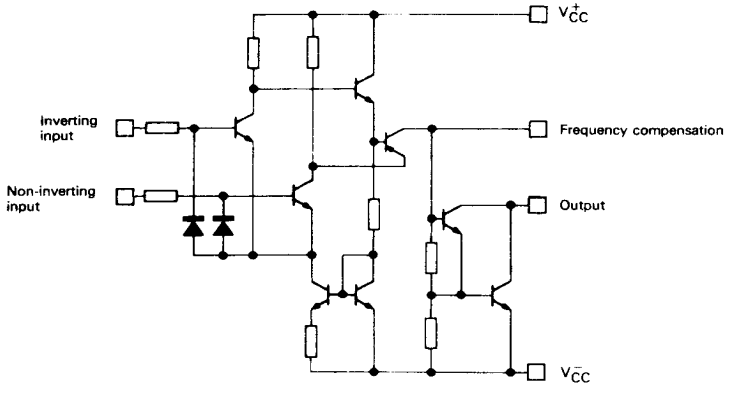
THOMSON COMPONENTS

MAXIMUM RATINGS

Rating	Symbol	TAA762M	TAA765I	TAA761C	Unit
Supply voltage	V_{CC}	± 18	± 18	± 18	V
Differential input voltage	V_{ID}	± 1.5	± 1.5	± 1.5	V
Input voltage	V_I	± V_{CC}	± V_{CC}	± V_{CC}	V
Input offset current	I_{IO}	70	70	70	mA
Power dissipation	P_{tot}	500	500	500	mW
Operating free-air temperature range	T_{oper}	− 55 to + 125	− 25 to + 85	0 to + 70	°C
Storage temperature range	T_{stg}	− 65 to + 150	− 65 to + 150	− 65 to + 150	°C
Junction temperature	T_j	+ 150	+ 150	+ 150	°C

SCHEMATIC DIAGRAM



CASE	Inverting input	Non-inverting input	V_{CC}^-	V_{CC}^+	Output	Frequency compensation
CB-116	3	2	4	1	5	6
CB-107	4	3	6	2	7	8

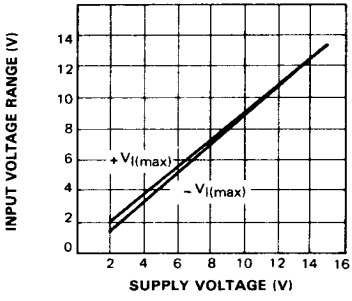
ELECTRICAL CHARACTERISTICS

TAA762M : $-55°C \leq T_{amb} \leq +125°C$, $V_{CC} = \pm 15$ V
TAA765I : $-25°C \leq T_{amb} \leq +85°C$, $V_{CC} = \pm 15$ V
TAA761C : $0°C \leq T_{amb} \leq +70°C$, $V_{CC} = \pm 15$ V
(Unless otherwise specified)

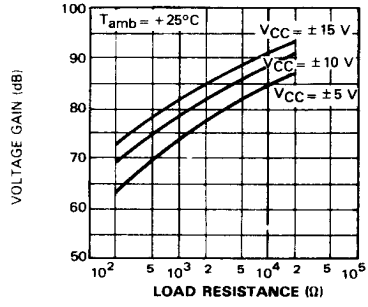
Characteristic	Symbol	TAA762M			TAA765I, TAA761C			Unit
		Min	Typ	Max	Min	Typ	Max	
Input offset voltage ($R_S = 60\ \Omega$) $T_{amb} = +25°C$, $R_L = 2$ kΩ $V_{CC} = \pm 5$ V $T_{min} \leq T_{amb} \leq T_{max}$	V_{IO}	– – –	– – –	4 4 6	– – –	– – –	6 6 –	mV
Input offset current $T_{amb} = +25°C$, $R_L = 2$ kΩ $V_{CC} = \pm 5$ V $T_{min} \leq T_{amb} \leq T_{max}$	I_{IO}	– – –	50 – –	100 70 300	– – –	80 – –	300 300 –	nA
Input bias current $T_{amb} = +25°C$ $V_{CC} = \pm 5$ V $T_{min} \leq T_{amb} \leq T_{max}$	I_{IB}	– – –	0.3 – –	0.7 0.6 1	– – –	0.5 – –	1 1 –	µA
Large signal voltage gain ($T_{amb} = +25°C$) $R_L = 2$ kΩ, f = 1 kHz $R_L = 10$ kΩ, f = 1 kHz $R_L = 2$ kΩ, f = 1 MHz $R_L = 2$ kΩ, $V_{CC} = \pm 5$ V, f = 1 kHz	A_{VD}	85 – – 70	87 92 43 –	– – – –	81.5 – – 70	85 90 43 –	– – – –	dB
Supply voltage rejection ratio	SVR	–	25	200	–	25	200	µV/V
Positive supply current $T_{amb} = +25°C$ $V_{CC} = \pm 5$ V	I_{CC}	– –	1.8 0.7	2.5 –	– –	1.8 0.7	2.5 –	mA
Power consumption ($T_{amb} = +25°C$, $R_L = 2$ kΩ, $V_O = 0$)	P_D	–	170	180	–	170	190	mW
Temperature coefficient of input offset voltage ($R_S = 60\ \Omega$)	αV_{IO}	–	6	25	–	6	–	µV/°C
Average temperature coefficient of input offset current ($R_S = 60\ \Omega$)	αI_{IO}	–	0.3	1.5	–	0.3	–	nA/°C
Input voltage range ($R_L = 2$ kΩ)	V_I	± 12	± 13.5	–	± 12	± 13.5	–	V
Common-mode rejection ratio ($T_{amb} = +25°C$, $R_L = 2$ kΩ)	CMR	70	81	–	65	79	–	dB
Output leakage current ($T_{amb} = +25°C$, $V_O = +15$ V)	I_{OH}	–	1	10	–	1	10	µA
Output voltage swing $T_{amb} = +25°C$, $R_L = 2$ kΩ $R_L = 620\ \Omega$ $V_{CC} = \pm 5$ V, $R_L = 2$ kΩ $T_{min} \leq T_{amb} \leq T_{max}$, $R_L = 2$ kΩ $R_L = 620\ \Omega$ $V_{CC} = \pm 5$ V, $R_L = 2$ kΩ $T_{amb} = +25°C$, $R_L = 2$ kΩ, f = 100 kHz	V_{OPP}	14.9 14.9 4.9 14.8 14.8 4.8 –	– – – – – – ± 10	– 14 – 12.5 – 4 – 14 – 12 – 4 –	14.9 14.9 4.9 14.8 14.8 4.8 –	– – – – – – ± 10	– 14 – 12 – 4 – 14 – 12 – 4 –	V
Slew rate	S_{VO}	–	9	–	–	9	–	V/µs
Equivalent input noise voltage according to DIN45405 standards	V_n	–	3	–	–	3	–	µV
Input resistance ($T_{amb} = +25°C$, f = 1 kHz)	R_I	–	200	–	–	200	–	kΩ

TAA762M - TAA765I

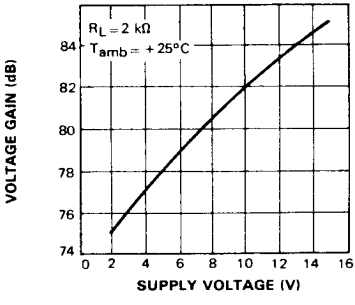
INPUT VOLTAGE RANGE (Note 1)



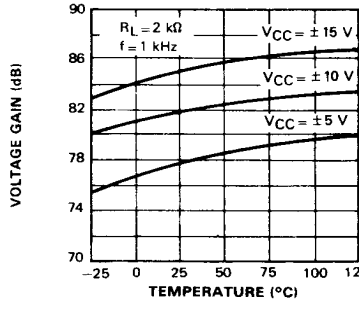
VOLTAGE GAIN



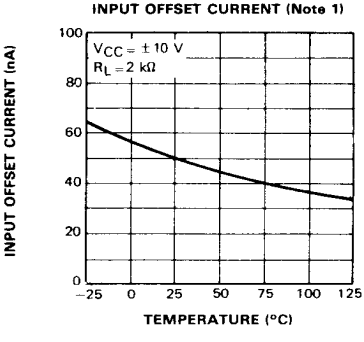
VOLTAGE GAIN (Note 1)



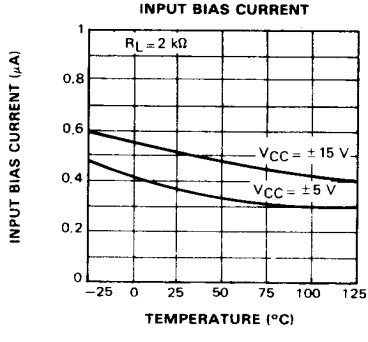
VOLTAGE GAIN



INPUT OFFSET CURRENT (Note 1)



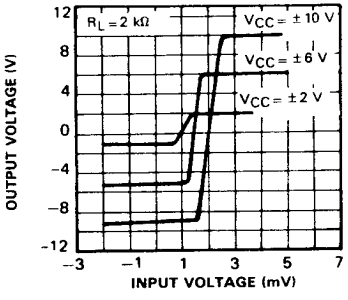
INPUT BIAS CURRENT



Note 1 : **TAA762M** : $-55°C \leqslant T_{amb} \leqslant +125°C$, $V_{CC} = \pm 15$ V
TAA 765I : $-25°C \leqslant T_{amb} \leqslant +85°C$, $V_{CC} = \pm 15$ V
TAA761C : $0°C \leqslant T_{amb} \leqslant +70°C$, $V_{CC} = \pm 15$ V

TAA761C

TRANSFER FUNCTION



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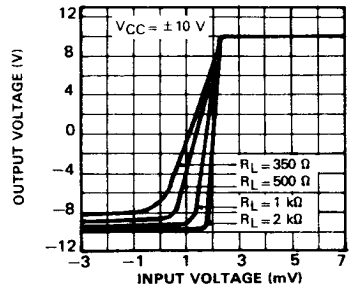
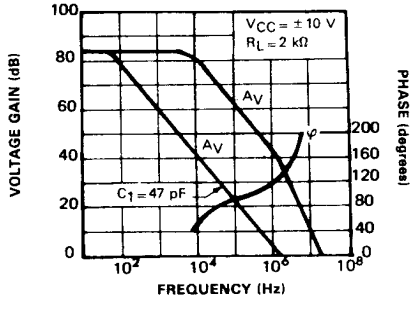
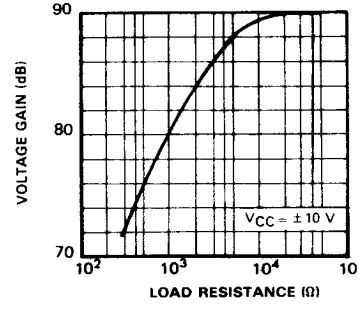


OPEN LOOP FREQUENCY RESPONSE

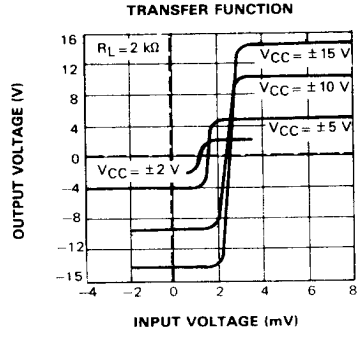


VOLTAGE GAIN



TAA762M - TAA765I

TRANSFER FUNCTION



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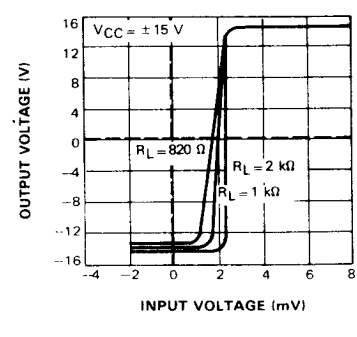
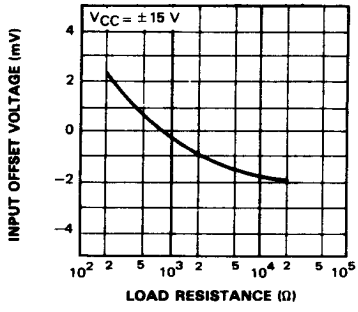
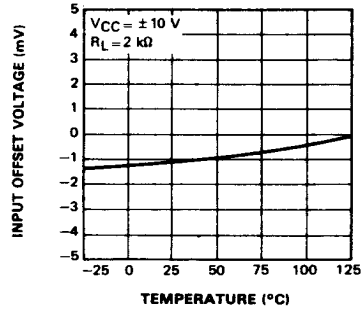


TAA762M - TAA765I

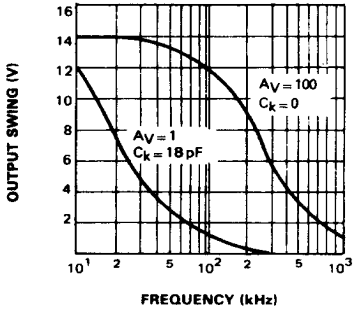
INPUT OFFSET VOLTAGE



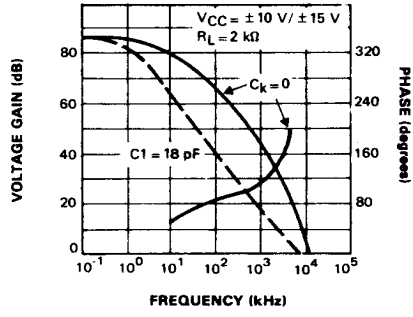
INPUT OFFSET VOLTAGE



LARGE SIGNAL FREQUENCY RESPONSE

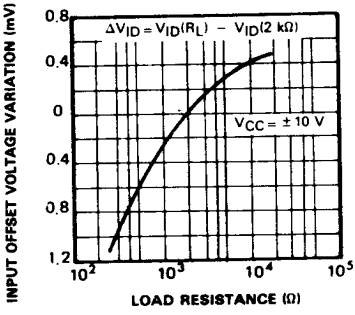


OPEN LOOP FREQUENCY RESPONSE

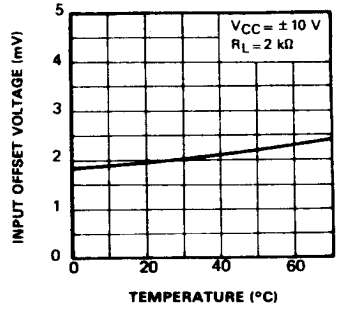


TAA761C

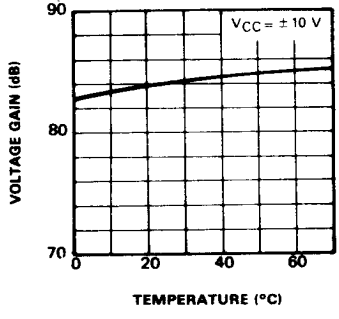
INPUT OFFSET VOLTAGE VARIATION



INPUT OFFSET VOLTAGE

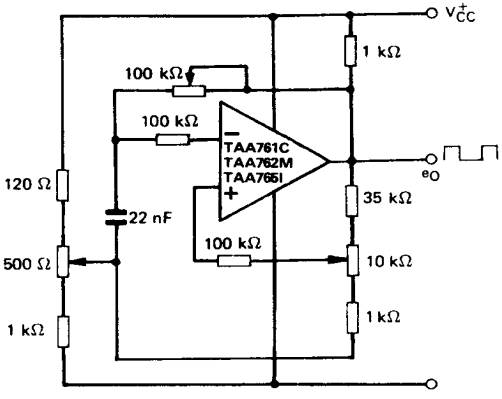


VOLTAGE GAIN

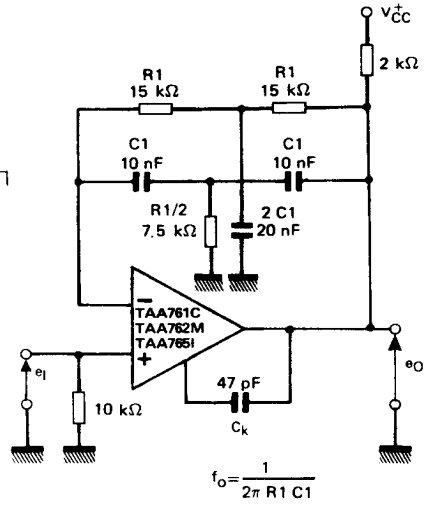


TYPICAL APPLICATIONS

PULSE GENERATOR

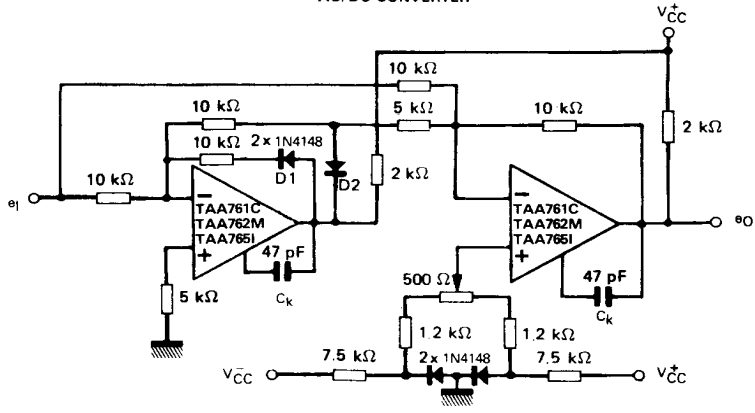


SELECTIVE AMPLIFIER

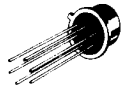


$$f_o = \frac{1}{2\pi\ R1\ C1}$$

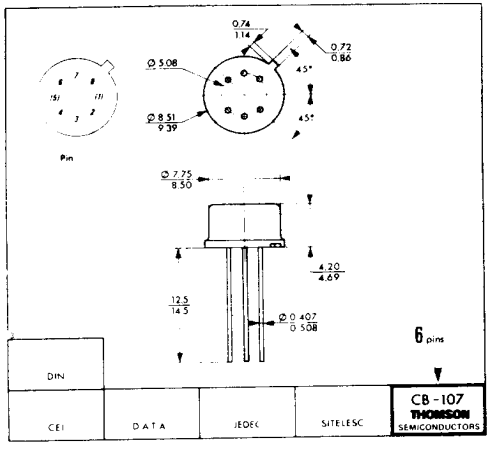
AC/DC CONVERTER



CB-107

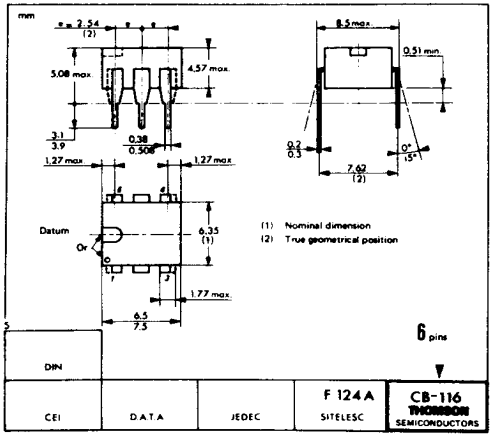


H SUFFIX
METAL CAN



CB-116

DP SUFFIX
PLASTIC PACKAGE



These specifications are subject to change without notice.
Please inquire with our sales offices about the availability of the different packages.